

**TOWN OF ANTRIM, NEW HAMPSHIRE**  
**INDUSTRIAL SCALE WIND ORDINANCE**

7/5/11

- 1.0 **Title.** This ordinance shall be known as the Town of Antrim, NH **Industrial Scale Wind Ordinance.**
- 2.0 **Purpose.** The purpose of this Ordinance is to provide for the development and use of wind power as an alternative energy source, **benefiting both the economy and the environment, while protecting public health, safety and general welfare, preserving environmental, historic and scenic resources, controlling noise levels and preventing electromagnetic interference.** This ordinance provides a permitting process to insure compliance with requirements and standards established therein.
- 3.0 **Authority.** This Ordinance is adopted pursuant to the enabling provisions of NH RSA 674:16 and NH RSA 674:1, V.
- 3.1 **Conflicts with Other Ordinances and Regulations.** If there is a conflict between provisions in this Ordinance or between a provision in this Ordinance and a provision of any other ordinance or regulation, the more restrictive provision shall apply.
- 3.2 **Validity and Severability.** Should any section or provision of this Ordinance be declared by the courts to be invalid, such a decision shall not invalidate any other section or provision of the Ordinance.
- 4.0 **Effective Date.**
- 4.1 This Ordinance shall become effective on the date of its passage.
- 5.0 **Applicability.** This ordinance applies to all **Wind Energy Facilities (WEF)** consisting of one or more **turbines with a nameplate capacity of more than 100 kW and Meteorological Towers (MT) in the Wind Resource Overlay District in the** Town of Antrim proposed to be constructed or operated after the effective date of this Ordinance.
- 6.0 **Definitions.** *Attach*
- 7.0 **Design, Manufacture, and Construction Standards**
- 7.1 The design and manufacture of all meteorological towers, all wind turbines, and all other components of a WEF shall conform to applicable national, state, and local standards for the wind industry, such as those established by the American National Standards Institute (ANSI), Underwriters Laboratories, and similar certifying organizations. All MTs and all components of a WEF shall conform to local, state, and national building codes.
- 7.2 **Meteorological towers (MT).** Meteorological towers must be under **200 feet in height, and must be designed so as not to require lighting. Guy wires are allowed but must be designed so as to limit Environmental Hazard to wildlife, especially birds and bats.** For MTs connected with the potential development of commercial WEFs, a Decommissioning Bond will be required to ensure timely removal of the equipment.
- 7.3 **Height.** **The height of a WEF shall not exceed 450 feet.**
- 7.4 Underground power and transmission lines shall be buried at a depth consistent with state public utility engineering standards to prevent transient ground currents and stray voltage.
- 7.5 An application for a permit for a WEF that will be connected to the Public Utility Grid shall include a Public Utility Grid Impact Statement documenting all anticipated changes to the public utility grid within the Town of Antrim due to the WEF. The Statement shall be signed and approved by the New Hampshire Public Utilities Commission and shall include proof of leases or rights of way for transmission lines, and an analysis of the residual capacity in the grid that will be available to other local generating projects after the construction of the WEF.

**Comment [EJC1]:** Consider "Utility" as words like industrial, commercial, and large can have a negative connotation.

**Comment [EJC2]:** See comment above.

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**Comment [EJC3]:** Does this preclude the development from having any negative environmental impacts?

**Comment [EJC4]:** We may want to make the distinction here between a Wind Energy Facility and a single wind turbine. I would suggest that a WEF includes the substation, step up transformers, O&M building, etc., whereas a wind turbine (Wind Turbine Generator [WTG]?, Wind Energy Generator [WEG]?, Wind Turbine [WT]?) refers to the turbine itself. There are times when reference in the ordinance should be made to the entire facility (decommissioning, sound, etc.) vs individual wind turbines (height).

**Comment [EJC5]:** See comment above- suggest making consistent with whatever acronym is chosen.

**Comment [EJC6]:** Would suggest changing this to "101" kW, since 100 kW is still considered by the American Wind Energy Association (AWEA) to be small or community scale wind. Since there are several models at exactly 100kW (nameplate), we don't want to preclude someone from installing a small turbine on their property.

**Comment [EJC7]:** Kilowatt is represented with a lower case "k" and uppercase "W".

**Comment [EJC8]:** Alternatively, this could be "Meteorological (met) Towers".

**Deleted:** KW

**Comment [EJC9]:** See below for terms and definitions.

**Comment [EJC10]:** In this section, consider including the following additional items:

1. Blade Clearance: The minimum blade clearance from the ground shall be 25 feet as measured at the lowest point of the tip of the blade. ... [1]

**Comment [EJC11]:** "Met towers" is common shorthand in the industry.

**Comment [EJC12]:** Met mast installations are trending towards 80 m to provide more accurate data for 80 ... [2]

**Comment [EJC13]:** Consider revising to "environmental impacts"

**Comment [EJC14]:** Consider revising this to say "The height of a WEF shall not exceed Federal Aviation Administ ... [3]

7.6 A WEFT shall be equipped with a redundant braking system that includes both aerodynamic over-speed controls (including variable pitch, tip, and other similar systems) and mechanical brakes. Mechanical brakes shall operate in fail-safe mode. Stall regulation shall not be considered a sufficient braking system for over-speed protection.

7.7 WEFTs shall be designed and sited to prevent the disruption or loss of emergency or private radio, telephone, television, or similar signals. Interference with such communications shall be grounds for ordering the immediate shut down of the WEF until the interference has been remedied.

7.8 WEFTs shall be mounted on monopole towers with no guy wires.

7.9 The color of WEFTs and MTs shall be off-white or grey or some other unobtrusive color approved by the Town of Antrim Planning Board.

7.10 WEFTs shall not be used to display signs or advertising except for signs at ground level identifying the turbine manufacturer, the WEF Owner/Operator, emergency contact information, and appropriate warnings as required by national, state, and local laws.

7.11 All construction activities must conform to the approved site plan, including any conditions of approval and changes approved by the Code Enforcement Officer and/or the Planning Board.

7.12 **Modification During Construction** If at any time it appears necessary or desirable to modify the approved plans before or during construction of the WEF, the Code Enforcement Officer, with assistance at the Applicant's expense from such staff, consultants or experts as the CEO deems appropriate, is authorized to approve minor modifications due to unforeseen circumstances such as encountering hidden outcrops of bedrock, natural springs, etc. The Code Enforcement Officer shall issue any approval under this section in writing and shall transmit a copy of the approval to the Selectmen and Planning Board. Revised plans shall be filed with the Planning Board for the record. For major modifications such as relocation of rights-of-way, relation of WEFTs, changes in grade by more than 1%, etc., the Applicant shall submit to the Planning board an amended plan for review and approval.

## 8.0 Public Health and Safety Standards

8.1 **Setback Standards.** All MTs and WEFTs must be sited so as to satisfy the Setback Standards for the following hazards: Falling, Debris and ice throw and Shadow Flicker. Setback shall be no less than 1.5 times the maximum height of the MT or wind turbine from the nearest property line. Wind Turbines shall be no less than 5 times the turbine height from Receptors.

8.1.1 A WEFT shall be designed and sited in a manner that does not result in shadow flicker impacts. The applicant has the burden of proving that this effect does not have significant adverse impact on neighboring or adjacent uses. Owner/Operators may request a waiver of this standard by means of written Covenants as specified in section \_\_\_\_\_ of this Ordinance for shadowing or flicker impacts.

8.2 The applicant shall compute or look up, as appropriate, and graph the required setback for each hazard as a circle for a single unit or as a series of connected arcs for multiple units centered on each turbine and submitted with the required setback graphically superimposed to scale on town maps identifying lot owners and lot property lines.

8.3 **Acoustic Standards.** Sound levels due to the operation of the WEF shall not exceed levels set forth herein at Receptors or structures in the Town of Antrim. Owner/Operators may request a waiver of these standards by means of written Covenants as specified in section \_\_\_\_\_ of this Ordinance.

8.3.1 Pre-construction ambient sound levels shall be assumed to be 25 dB(A) and 30 dB(C), or, by request, may be measured according to the standards specified in sections 8.3.4, 8.3.5, and 8.3.6. A 5 dB(A) penalty shall be applied for tonal noise. This is a single tone or limited frequency sound (vs. broadband sound) associated with mechanical sound artifacts (i.e. high pitched whining, screeching, buzzing).

8.3.1 Sound pressure levels at non-participating property lines shall not be less than or equal to 5 dB(A).

**Comment [EJC15]:** Perhaps it would be good to explicitly state that an EMI study is required.

Also specific wind turbine(s) are generally the cause of electromagnetic interference. If a WEF was not designed to avoid electromagnetic interference, it would likely not be necessary to shut down the whole facility, but rather the culprit wind turbine(s).

**Comment [EJC16]:** Consider allowing black blades to facilitate de-icing. Regardless of color, all blades should be the same color and this should be stated.

Also, consider "towers and blades shall be matte, or non-reflective."

**Comment [EJC17]:** May want to further define "minor modifications." Some ordinances allow "micrositing" by studying corridors rather than turbine locations. Other ordinances specify (... [4])

**Comment [EJC18]:** Relocation?

**Comment [EJC19]:** "Hazards" generally has a negative connotation (... [5])

**Comment [EJC20]:** Consider setback standards only applicable to non- (... [6])

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**Comment [EJC21]:** This is fairly conservative, but not unreasonable (... [7])

**Comment [EJC22]:** Be careful of stating that if you abide to these s (... [8])

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**Comment [EJC23]:** Consider defining "significant adverse impa (... [9])

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**Comment [EJC24]:** Consider including construction noise or H (... [10])

**Deleted:** property lines

**Comment [EJC25]:** Consider setting an assumed pre-construction am (... [11])

**Comment [EJC26]:** Consider specifying how to determine whe (... [12])

**Comment [EJC27]:** Sound pressure level (SPL) is the measurement (... [13])

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above preconstruction ambient levels in dB(A). Sound pressure levels at non-participating property lines shall be less than or equal to 20 dB(C) above preconstruction ambient levels.

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**Comment [EJC28]:** This standard equates to a maximum sound pressure level of 30 dB(A) and 50 dB(C), which is a very stringent standard.

The World Health Organization suggest maximum daytime levels of 55 dB(A) to protect against serious annoyance and 50 dB(A) to protect against moderate annoyance, and maximum nighttime levels of 45 dB(A). Generally, if sound levels outside a residence remain at or below 45 dB(A), sound levels inside the residence will remain below 30 dB(A).

The noise section I think has to be seriously discussed with the Town... GL  
GH recommends: ... [14]

**Comment [EJC29]:** Consider revising to this wording.

**Deleted:** DBC levels shall not be more than 20 dB above the m... [15]

**Deleted:** 8.3.2. Prior to permit application approval, a pre-... [16]

**Comment [EJC30]:** Consider setting an assumed pre-construction am... [17]

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**Comment [EJC31]:** 10 business days?

**Comment [EJC32]:** PE in acoustics required? There are few engineer... [18]

**Comment [EJC33]:** See comment above. I'd suggest 101kW to avo... [19]

**Comment [EJC34]:** Will this plan need to be approved prior to sub... [20]

**Comment [EJC35]:** If WEF is defined as "a wind energy facilit... [21]

**Comment [EJC36]:** Generally the parts of the turbine that catch on... [22]

**Comment [EJC37]:** This may be better as a recommendation or be... [23]

**Comment [EJC38]:** Consider including solid waste too? ... [24]

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**Comment [EJC39]:** At the time of application? Also, what should b... [25]

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**Comment [EJC40]:** What does "qualified" in this instance mean... [26]

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8.3.3 Sound measurements shall be carried out at appropriate property lines or structures as soon as possible after the Town of Antrim Planning Board determines that a violation of the noise standards may have occurred. Once a violation has been verified, the Owner/Operator shall mitigate the problem within 10 days. Failure to mitigate the problem will result in the WEF(s) being declared unsafe and emergency shutdown procedures shall be implemented.

8.3.4 All sound measurements shall be made by a professional acoustical engineer who is a Full Member of the Institute of Noise Control Engineering (INCE) or who possesses some comparable qualification. The engineer shall chosen by the Owner/Operator from a list provided by the Planning Board and paid by the Owner/Operator.

8.3.5 Except as specifically noted otherwise, sound measurements shall be conducted in compliance with the American National Standards Institute (ANSI) Standard S12.18-1994 "Outdoor Measurements of Sound Pressure."

8.3.6 Sound level meters and calibration equipment shall comply with the latest version of ANSI Standard S1.4 "Specifications for General Purpose Sound Level Meters," and shall have been calibrated at a recognized laboratory within one year before the sound measurements are carried out.

8.4 An Application for a permit to construct a WEF with one or more turbines having a nameplate capacity of 100 kW or more shall include a Fire Prevention and Fire Fighting Plan that has been approved by the Town of Antrim Fire Department. The plan shall identify a response plan to address all potential WEF fire scenarios and include a list of hazardous materials that may be encountered.

8.5 The Owner/Operator of a WEF with one or more turbines having a nameplate capacity of 100 kW or more shall ensure that the WEF complies with the following fire control and prevention measures and assumes responsibility for all associated incremental costs.

- Use of fireproof or fire resistant building materials and buffers as required by state law or the Antrim Fire Department.
- Incorporation of a self-contained fire protection system in the WEF turbine nacelle.
- Maintenance of firebreak areas cleared of vegetation, as required by state law or the Antrim Fire Department.
- Provision for any additional fire fighting or rescue personnel, services, training, materials, and vehicles as may be required to deal with any emergency related to the WEF that is beyond the current capabilities of the Antrim Fire Department.

8.6 The Owner/Operator of any WEF shall be responsible for compliance with all ordinances, regulations, and laws applicable to the generation, storage, cleanup, and disposal of hazardous materials connected with the WEF.

## 8.7 Road and Property Risk Assessment

8.7.1 An application for a permit to construct a WEF shall include a Road and Property Risk Assessment that has been approved by the Town of Antrim Road Agent.

8.7.2 The Town of Antrim Planning Board shall require changes to the Road and Property Risk Assessment plan that it deems appropriate to protect public safety, to protect public and private property, and to address anticipated costs to the town.

8.7.3 A qualified third party engineer, chosen by the Applicant from a list provided by the Planning Board and paid by the Applicant, shall document road conditions prior to the construction of the WEF, and again within thirty days after construction is complete. Any road damage determined by the engineer to have been caused by the applicant or his contractors shall be

promptly repaired at the applicant's expense.

8.7.4 The Town of Antrim may bond the roads in compliance with state regulations, and the bond is to be paid by the applicant prior to the transport of WEF components.

8.8 The Owner/Operator of the any WEF shall notify the Town of Antrim Select Board and Planning Board of any "extraordinary event" within 24 hours after that event. Extraordinary events shall include but not be limited to tower collapse, catastrophic turbine failure, fires, leakage of hazardous materials, unauthorized entry into a tower base, thrown blade or hub, injury caused by the WEF, and any other event that affects the public health and safety of the town or its residents.

### 9.0 Environmental Standards

9.1 The siting and construction of all WEFs shall meet all the applicable standards of the Zoning Ordinance of the Town of Antrim and be consistent with the Town of Antrim Master Plan.

9.2 **Environmentally Sensitive Areas.** The design, construction, and maintenance of a WEF shall protect all environmentally sensitive areas that may be affected by its siting. Such areas shall include but not be limited to wetlands, vernal pools, seeps or springs, steep slopes (equal to or greater than 15%), watersheds, flood plains, significant habitat for wildlife, fish, and plants. An application for a WEF permit shall demonstrate appropriate measures for protecting all such areas during both construction and operation of the WEF.

### 9.3 Wildlife Protection.

9.3.1 The application for a WEF shall include a Wildlife Protection Plan based on pre-construction field studies designed and carried out by a qualified wildlife biologist chosen by the Applicant from a list provided by the Planning Board and paid by the applicant. Such studies shall describe the possible adverse effects of the WEF on birds, bats, animals and their habitats, and shall propose remedies for these effects.

9.3.2 **Post Construction Wildlife Protection Field Studies.** Within three years after completion of construction of a WEF, studies to ascertain its actual effect on wildlife shall be designed and carried out by a qualified wildlife biologist chosen by the Owner/Operator from a list provided by the Planning Board and paid by the Owner/Operator. If these studies demonstrate undue adverse effects on wildlife caused by the WEF, the Owner/Operator shall design and implement an appropriate mitigation plan. The plan shall be submitted to the Town of Antrim Planning Board for approval. The Owner/Operator shall be responsible for the full cost of carrying out the plan.

9.4 **Erosion Control.** WEFs shall be designed, constructed, and maintained in accordance with accepted erosion and sediment control methods as set forth by NH Department of Environmental Services (DES).

### 9.5 Water Quality Protection.

9.5.1 WEFs shall be designed, constructed, and maintained so as to avoid undue adverse impacts to groundwater, including sand and gravel aquifers. The Planning Board may require as condition of issuing a permit for a WEF that a pre-construction baseline study of all wells, springs, and public water sources within the watershed of the WEF site be conducted. The study shall be designed and carried out by a water quality professional chosen by the Applicant from a list provided by the Planning Board and paid by the Applicant.

9.5.2 **Post Construction Groundwater Quality Study.** Within two years after completion of construction of a WEF for which the Planning Board has required a pre-construction baseline Water Quality Study as described in section \_\_\_\_\_ of this Ordinance, a Post Construction Water Quality study of all wells, springs, and public water sources within the watershed of the WEF site shall be designed and carried out by a water quality professional chosen by the Applicant from a list provided by the Planning Board and paid by the Owner/Operator. If degradation or contamination is found to have occurred, fines and/or permanent remedies as required by the Town of Antrim or the

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**Comment [EJC41]:** It is fairly common to see a buffer required for sensitive areas, usually between 50ft and 200ft. Perhaps consider including this?

**Comment [EJC42]:** Consider "avoid, minimize, and mitigation impacts to" instead of "protect".

**Comment [EJC43]:** See above comment.

**Comment [EJC44]:** Is there a time/season requirement for these studies? Typically we see one year of fall and spring migration studies as well as breeding bird surveys for avian species, one year of bat monitoring, and varying degrees of other wildlife studies. Also, habitat classification may be necessary.

**Comment [EJC45]:** See above comment. What is a "qualified" biologist.

**Comment [EJC46]:** Is this suggesting three years of post construction studies or just a report to the Planning Board three years after COD?

I would suggest not requiring post construction studies, but instead potentially conditioning the permit with such studies depending on the results from the pre-construction wildlife ... [27]

**Comment [EJC47]:** See above comment.

**Comment [EJC48]:** How is this defined?

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**Comment [EJC49]:** See above comment.

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**Comment [EJC50]:** What about surface water quality? Should we ... [28]

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**Comment [EJC51]:** How is this defined?

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State of New Hampshire shall be the responsibility of the Owner/Operator.

9.6 **Hazardous Wastes.** The Owner/ Operator shall be responsible for compliance with all state and federal regulations applicable to the use and disposal of hazardous wastes involved in or generated by the WEF's construction and operation. This responsibility shall extend to safe and lawful disposal of the by-products of any Acid Rock Testing and Mitigation Plan.

9.7 **Blasting.** Owner/Operator of a WEF shall not undertake any blasting without notifying the Town of Antrim and submitting a Blasting Plan. All blasting shall be in accordance with NH Chapter Saf-C 1600 standards. The Blasting Plan shall be reviewed and approved by the Antrim Planning Board before any blasting takes place. Forty-eight hour notice shall be given to all residents within a two mile radius of the blasting area (measured horizontally) before blasting can begin.

9.8 **Light Pollution.** All WEFs shall be designed and sited to minimize nighttime light pollution and shall not exceed the minimum requirements by the Federal Aviation Authority (FAA). Red lights shall be used instead of white if possible and shall be shielded to the greatest extent possible from viewers on the ground. An applicant for a WEF shall provide a plan showing all lighting on and around the WEF.

9.9 **Scenic Resource Standards.** If a WEF is proposed for a site that is visible from a Scenic or Special Resource as defined by \_\_\_\_\_, the Applicant shall provide the Planning Board with a Visual Impact Assessment that address the evaluation criteria set forth in the \_\_\_\_\_.

10.0 Financial Standards

10.1 An applicant for a WEF shall provide evidence satisfactory to the Town of Antrim Planning Board that the project is financially viable. Evidence of financial viability shall include the following:

- A budget for the construction of the WEF.
- Proof of adequate financing for all aspects of the construction
- Proof of long-term power purchase contracts.
- Proof of adequate funds for Decommissioning as specified in section \_\_\_\_\_ of this Ordinance.

10.2 The Owner/Operator of a WEF shall maintain a current General Liability Policy covering bodily injury and property damage commensurate with the scope and scale of the project. Proof of current insurance must be presented to the Planning Board with the application for a permit and every year thereafter on the date of the insurance's annual renewal.

10.3 The Owner/Operator of a WEF shall, at his/her expense, be responsible for complete decommissioning of the WEF within twelve months after it ceases to generate electricity, or after its operational license expires or has been revoked.

10.3.1 Decommissioning shall include removal and disposal off-site of all parts of the WEF (including foundations) in accordance with local, state and federal laws and regulations. Areas of disturbed earth shall be graded, seeded, or otherwise re-vegetated.

10.3.2 A Professional Engineer shall be chosen by the Applicant from a list provided by the Planning Board and paid by the Applicant to estimate the total cost of Decommissioning without consideration of the salvage value of the equipment. The amount of this estimate shall be the amount of the Decommissioning Funds required to be posted at the time of the initial Application.

10.3.3 No permit for a WEF shall be issued until Decommissioning Funds have been posted by the Applicant with a bonding company or a Federal or State-chartered lending institution (the Escrow Agent) authorized to conduct such business in the State of New Hampshire and approved by the Town of Antrim.

10.3.4 Estimates as described in section \_\_\_\_\_ shall be redone annually on the anniversary of the granting of a WEF Permit, and the Owner/Operator of the WEF shall be required to maintain Decommissioning Funds that are at least equal to the most recent estimate.

Comment [EJC52]: While I ... [29]
Comment [EJC53]: Hazardo ... [30]
Comment [EJC54]: ???
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Comment [EJC55]: Consider ... [32]
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Comment [EJC63]: Consider ... [65]
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10.3.5 Decommissioning funds may be in the form of a performance bond, surety bond, letter of credit or other form of financial assurance acceptable to the Town of Antrim.

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10.3.6 If the Owner/Operator of the WEF does not complete Decommissioning within the time prescribed in section \_\_\_\_\_ of this Ordinance, the Town of Antrim may take such action as necessary (including court action) to secure the posted Decommissioning Funds and to ensure completion of the Decommissioning.

Comment [EJC64]: Consider adding to 10.3.3, as this seems to further define "Decommissioning Funds".

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10.3.7 The Escrow Agent shall not release the Decommissioning Funds except upon written approval of the Town of Antrim.

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10.4 Tax Agreement and Tax Impact Statement An Applicant for a WEF shall enter into a tax agreement with the Town of Antrim and shall also present the Town a Tax Impact Statement.

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10.4.1 The Tax Agreement shall describe the methodology that will be used for tax valuation of the WEF throughout the period of its useful life. The Tax Agreement shall be reviewed by a qualified tax attorney chosen from a list provided by the Town of Antrim Planning Board and paid by the Applicant. No permit shall be issued until the Tax Agreement has been approved by the Town of Antrim Planning Board.

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10.4.2 The Tax Impact Statement shall estimate the annual tax burden on the citizens of Antrim over a 10-year period beginning with the first full year of the WEF's operation. The Tax Impact Statement's estimates shall be based on the following data and assumptions: 1) the estimated tax contribution from the WEF that will result from the Tax Valuation Agreement; 2) estimated reduction in tax revenue due to any reductions in the value of properties covered by waivers (assuming that other property values remain constant); 3) estimated adjustments to the amount received from the State for aid to education (assuming a constant school budget; 4) estimated adjustments to the amount received as part of the State municipal revenue sharing program; 5 a constant mill rate. The Tax Impact Statement shall be prepared by an Accountant chosen from a list provided by the Town of Antrim and paid by the Applicant.

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10.5 Promises of benefits made to the Town of Antrim by the applicant shall be documented and submitted with the Final Application. These benefits shall become a legally enforceable provision of the permit.

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10.6 Property Value

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Comment [EJC65]: ???

11.0 Ethical Standards

11.1 All deliberations concerning the permitting and regulation of WEFs shall be conducted at public meetings for which notice has been duly given.

Comment [EJC66]: Does there need to be a temporal definition (2 weeks notice? 1 month notice? Etc.)

11.2 Conflicts of Interest. No elected or appointed official or employee of the Town of Antrim who has a financial interest in the WEF under consideration shall be directly or indirectly involved in the permitting or other regulation of that WEF. Financial interest includes but is not limited to the following:

- Having right, title or interest in land on which any part of the WEF will be constructed
- Having signed for the Applicant's benefit a Covenant with financial remuneration
- Having a financial arrangement such as employment or the promise of employment—including employment as an outside contractor—with the Applicant
- Serving as a paid representative of an individual or company that derives income from the development of wind power

12.0 Permitting and Licensing Authority

12.1 The Town of Antrim Planning Board is authorized to review all applications for permits to erect MTs and to construct WEFs and all applications for operational licenses to operate such Facilities in the Town of Antrim. The Planning Board may approve, reject, or conditionally approve applications in accordance with the standards of this Ordinance.

Deleted: Meteorological Towers

Deleted: Wind Energy Facilities

12.2 The Town of Antrim Planning Board and/or its designated agents or representatives shall have the right to access and inspect WEF sites.

12.3 The Town of Antrim Planning Board reserves the right to limit the number of applications for WEF permits that are under review at any given time. Only one application for a WEF permit will be accepted or processing at any given time.

12.4 The New Hampshire Department of Environmental Services (DES) may be required to review WEF applications within the Town of Antrim. When making its own determination about such applications, the Planning Board shall consider, to the extent applicable, findings in the DES review.

12.5 Reserved: Notification: Property Owners in Setback Areas: Regional Impact \_\_\_\_\_

13.0 Permit and Operational License Requirements

13.1 Meteorological Tower (MT). The application for a permit for an MT shall be consistent with the requirements stated in Section IV of the Antrim Subdivision and Site Plan Review Regulations and shall include the following information:

- Applicant and property owner name, address and contact information
- Proposed location of the MT including lot designation
- Engineering drawing of proposed tower structure, instrument package, and guy system, if any
- Engineering drawing of proposed tower base
- Engineering drawing of tower location showing property lines and setback requirements (as specified in Table 1 of this Ordinance)
- Any building, use or construction permits required by other authorities because of the size or construction of the tower
- Intended period of data collection and date MT will be removed
- Plans for mitigation of Environmental Hazard to wildlife for towers requiring guy systems
- Description of intention
- Decommissioning Bond for MT
- A legally enforceable agreement that the applicant shall pay (in advance if required by the Town of Antrim Planning Board) for the services of all consultants that the Planning Board deems necessary to evaluate the application
- Fee: Per fee schedule

13.2 Wind Energy Facility (WEF). A Preliminary Application for a Permit to Construct a WEF shall include at least eight hard copies. Upon approval of the Preliminary WEF Application, a Final WEF Application shall be prepared and submitted in at least eight hard copies. Approval of the Final WEF Application shall constitute a Permit to Construct the WEF.

13.2.1 The Preliminary Application shall include the following items in addition to the requirements in section \_\_\_\_\_ of the Town of Antrim Major Site Plan Review Regulations.

- Applicant and property owner's name(s), address(s) and contact information
- Nameplate data for the type of WEF turbine(s) to be used including manufacturer, model, rated power output and maximum sound power level
- Engineering drawing of the type of WEF turbine to be used
- Certification of the non-reflecting properties of the WEF turbine's external surfaces
- Engineering drawing of the tower base for the type of WEF turbine to be used
- Engineering drawing of the WEF turbine location(s)
- Engineering or architectural drawings of all planned structures, including structures for support and maintenance of the WEF
- Description of intended use, including energy storage and grid connections, and the percentage (if any) of generation intended for sale or use by entities or persons other than the applicant
- Engineering drawings and/or electrical schematics of any energy storage equipment or facilities

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- Calculations and supporting data for all setback requirements (as specified in \_\_\_\_\_ of this Ordinance). Setback requirements must be calculated for each WEF turbine.
- Overlay of Town of Antrim property maps showing the setback area and all property lines and rights of way affected by the setback requirements.
- List of property owners whose property, wholly or in part, lies within the setback areas.
- Shadow-Flicker Modeling Report as specified in \_\_\_\_\_ of this Ordinance.
- A legally enforceable agreement that the applicant shall pay (in advance if required by the Town of Antrim Planning Board) for the services of all consultants that the Planning Board deems necessary to evaluate the application.
- Fees: As established by the Board of Selectmen.

13.2.1.1 The Planning Board shall make findings of fact and conclusions relative to the standards contained in this Ordinance and the Zoning Ordinance of the Town of Antrim, New Hampshire. If the Planning Board finds that all standards have been met, they shall approve the Preliminary WEF Application. If the Planning Board finds that any of the standards of this Ordinance or the Zoning Ordinance of the Town of Antrim, New Hampshire, have not been met, the Planning Board shall either deny the Preliminary WEF Application or approve the Preliminary WEF Application with conditions to ensure all of the standards will be met. The reasons for any conditions shall be stated in the findings of facts and conclusions.

**13.2.2 The Final Application shall include the following items in addition to the requirements in section \_\_\_\_\_ of the Town of Antrim Major Site Plan Review Regulations.**

- Updates to information provided in the preliminary permit, including additions, corrections, and any other changes.
- Results of any meteorological testing.
- Any building use or construction permits required by other authorities due to the scope of the intended project.
- Public Utility Grid Impact Statement as specified in section \_\_\_\_\_ of this Ordinance.
- Financial analysis including evidence of financial capacity to carry out the project, as specified in section \_\_\_\_\_ of this Ordinance.
- Proof of general liability insurance as specified in section \_\_\_\_\_ of this Ordinance.
- Decommissioning bond as specified in section \_\_\_\_\_ of this Ordinance.
- Tax Valuation Agreement as specified in section \_\_\_\_\_ of this Ordinance.
- Tax Impact Statement as specified in section \_\_\_\_\_ of this Ordinance.
- Statement of Benefits promised to the Town of Antrim, if any.
- Fire Prevention and Fire Fighting Plan as specified in sections \_\_\_\_\_ of this Ordinance.
- Road and Property Risk Assessment as specified in section \_\_\_\_\_ of this Ordinance.
- Plan to protect Environmentally Sensitive Areas, as specified in section \_\_\_\_\_ of this Ordinance.
- Wildlife Protection Plan as specified in section \_\_\_\_\_ of this Ordinance.
- Baseline Water Quality Study (if required) as specified in section \_\_\_\_\_ of this Ordinance.
- Plan for the handling and disposal of Hazardous Wastes as specified in section \_\_\_\_\_ of this Ordinance.
- Plan to minimize Light Pollution as specified in section \_\_\_\_\_ of this Ordinance.
- Visual Impact Assessment (if required) as specified in section \_\_\_\_\_ of this Ordinance.
- Blasting Plan as specified in Section \_\_\_\_\_ of this Ordinance.
- A legally enforceable agreement that the applicant shall pay (in advance if required by the Town of Antrim Planning Board) for the services of all consultants that the Planning Board deems necessary to evaluate the application.
- Fees : As established by the Board of Selectmen.

13.2.2.1 The Planning Board shall make findings of fact and conclusions relative to the standards contained in this Ordinance and the Zoning Ordinance of the Town of Antrim, New Hampshire. If the Planning Board finds that all standards have been met, they shall approve the Final WEF Application. If the Planning Board finds that any of the standards of this

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Ordinance or the Zoning Ordinance of the Town of Antrim, New Hampshire, have not been met, the Planning Board shall either deny the Final WEF Application or **approve the Final WEF Application with conditions to ensure all of the standards will be met.** The reasons for any conditions shall be slated in the findings of facts and conclusions.

13.2.3 An applicant for a WEF **permit** may also apply for a waiver of the **Shadow Flicker Hazard** and the Acoustic Standards specified in section \_\_\_\_\_. The Application (in at least eight hard copies) shall be submitted with the Final Application for the WEF and shall include the following items:

- A legal Covenant signed by the Applicant and each Inhabitant or Property Owner or other party of legal status in the Town of Antrim whose residence and/or property falls within the Flicker Hazard and Acoustic Hazard setback areas for the WEF declaring that the Inhabitant is willing to waive with respect to his/her residence and/or property the Flicker Hazard and/or Acoustic Hazard Setback Standards of this Ordinance and also the Acoustic Standards specified in section \_\_\_\_\_, including the protections they afford for the value of his/her property and for his/her personal health, safety, and welfare.
- A declaration signed by parties to the Covenant that it has been recorded at the Hillsborough County Registry of Deeds office appropriate to the affected property, and that the Covenant contains such legal language as may be necessary to make the agreement binding on current and future Inhabitants and/or Property Owners.
- A declaration signed by parties to the Covenant of the amount and terms of any consideration(s) provided to the Inhabitant and/or Property Owner for entering into the Covenant.
- A declaration signed by parties to the Covenant that they recognize that the burden of proof as to the legality of the Covenant and any Waiver of Standards of this Ordinance that may be granted by the Planning Board rests on the Applicant.
- Waivers shall be permitted for Acoustic Hazard and Flicker Hazard Standards.
- No Waivers of other Requirements and Standards in this Ordinance shall be **permitted.**

13.3 An application for an Operational License shall be submitted in eight hard copies to the Town of Antrim Planning Board **after the WEF has been fully built.**

An Operational License is required for the operation of any WEF built in the Town of Antrim.

13.3.1 The application for an original Operational License shall include the following items:

- An Inspection Report certifying the structural and operational integrity of the WEF. This Report shall be signed by a New Hampshire licensed professional engineer chosen by the Town of Antrim Planning Board and paid by the Owner/Operator of the WEF.
- A signed statement that the Applicant has read this Ordinance, understands all its provisions, and agrees to abide by them.
- Fee: As established by the Selectmen.

13.3.2 An Operational License shall be valid for \_\_\_\_\_ years and can be renewed by submission of a new Inspection Report and Fee as specified in section \_\_\_\_\_ of this Ordinance at least thirty days before expiration of the License.

13.3.3 An Operational License shall be revoked and the WEF required to cease operations if the Town of Antrim Planning Board determines that the WEF is violating any of the standards and requirements of this Ordinance. The Operational License shall not be reinstated until the Planning Board is satisfied that all violations have ceased and all problems have been corrected.

13.3.4 An Operational License shall automatically terminate upon transfer of ownership of the WEF. The new Owner/Operator shall apply for a new Operational License and shall not operate the WEF until the new License has been issued.

13.3.4.1 The Application for an Operational License by a new Owner/Operator shall contain the following items:

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hereto shall be subject to enforcement and penalties as allowed by NH R.S.A. 676:17. The Town of Antrim is authorized to enter into a Consent Agreement and in such cases court action is not necessary.

15.0 Appeals

15.1 An appeal of the decision of the Planning Board shall be done in accordance with Section of the

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16.0 Amendments/Modifications to Permit

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**Definitions**

Ambient Sound.

Applicant.

Comprehensive Plan. A plan for the guidance of growth and improvements of the county including modifications or refinements which may be made from time to time.

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dB(A)

dB(C)

Decommissioning

Easement. A grant of one or more property rights by a property owner to or for use by the public, or another person or entity.

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Federal Aviation Administration (FAA)

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Final Application

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Hazardous Waste.

Height of Building. The vertical distance from the average grade to the highest point of the roof.

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Height of Turbine. The maximum vertical distance to the highest point of the blade when perpendicular to the ground. Also known as tip height.

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Hub Height: The maximum vertical distance to the highest point of the nacelle.

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Lot. A parcel, tract, or area of land whose boundaries have been established by some legal instrument, which is recognized as a separate legal entity for purposes of transfer of title, has frontage upon a public or private street, and complies with the dimensional requirements of this code.

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Nacelle

Nameplate capacity.

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Meteorological Towers (MT)

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Minor Modifications.

Owner/Operator.

Planning Board. Refers to the Town of Antrim Planning Board.

Power Purchase Agreement (PPA).

Preliminary Application

Professional: As in "professional engineer or water quality professional."

Public Water Source

Receptor

Qualified: As in "qualified biologist"

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Scenic or Special Resource.

Shadow Flicker

Significant Adverse Impacts

Sound Pressure

Stream

Undue Adverse Impacts

Wetland. Those areas that are inundated or saturated by surface or ground water at a frequency or duration sufficient to support, and that under normal circumstance do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands include swamps, marshes, bogs, and other similar areas.

Wind Energy Facilities (WEF)

Wind Turbine (WT)

Wind Resource Overlay District

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**Page 1: [1] Comment [EJC10] Ellen Crivella 8/5/2011 12:47:00 PM**

In this section, consider including the following additional items:

1. Blade Clearance: The minimum blade clearance from the ground shall be 25 feet as measured at the lowest point of the tip of the blade.
2. Climb Prevention: All WEFs and MTs shall be designed and constructed in a manner to prevent climbing. This includes locking access doors. Fences shall not be considered an anti-climbing device.

**Page 1: [2] Comment [EJC12] Ellen Crivella 8/5/2011 12:47:00 PM**

Met mast installations are trending towards 80 m to provide more accurate data for 80 m and 100m hub heights. I would suggest allowing at least an 80 m (263 ft) met mast. Modern wind turbine hub heights are now commonly exceeding approximately 90 to 100 meters. In order to characterize atmospheric effects near the hub height of these new turbines, it is recommended to allow meteorological towers that are at least 80 m tall.

Also consider revising to “The height of a MT shall not exceed Federal Aviation Administration (FAA) standards.” 80 m met masts will require lighting per the FAA.

The 200 ft standard will preclude some types of turbines from being installed. If turbine choice is limited, some projects may no longer be economically viable.

**Page 1: [3] Comment [EJC14] Ellen Crivella 8/8/2011 10:19:00 AM**

Consider revising this to say “The height of a WEF shall not exceed Federal Aviation Administration (FAA) standards.” Currently there are turbine models that exceed 450 ft and the industry is moving towards larger turbines. Currently there are turbines with a hub height of 135m (450 ft), 126m (413ft) rotor diameter, and 63m (207ft) blade length. FAA considers turbine height, aka hub height plus blade length, in its evaluations.

While larger turbines are generally more visible, there are some additional benefits to having fewer turbines for **visual**, wildlife, sound, etc.

Also, by tying this provision to the FAA the ordinance will not have to be changed as turbine technology evolves. If the community feels like there should be a specific limit on turbine height, I would suggest increasing this to 500 ft to allow for new technologies.

**Page 2: [4] Comment [EJC17] Ellen Crivella 8/5/2011 12:47:00 PM**

May want to further define “minor modifications.” Some ordinances allow “micrositing” by studying corridors rather than turbine locations. Other ordinances specify the distance a facility can be moved (~100ft) without requiring an amendment to the permit.

**Page 2: [5] Comment [EJC19] Ellen Crivella 8/5/2011 12:47:00 PM**

“Hazards” generally has a negative connotation. Suggest revising to “potential impacts”.

**Page 2: [6] Comment [EJC20] Ellen Crivella 8/8/2011 10:20:00 AM**

Consider setback standards only applicable to non-participating landowners.

Often participating landowners prefer turbines to be near their lot lines. Also, it may preclude many landowners from participating in wind leases if a turbine has to be 1.5x turbine height from their lot as well as 5x turbine height from their home.

Consider reducing this to Blade + 10, with possibility to be closer if an agreement is signed with the adjacent land owner. 1.5x turbine height will place the turbine in the middle of fields (or perhaps impossible to site depending on the average lot width in Antrim), which is usually not accepted by landowners.

**Page 2: [7] Comment [EJC21] Ellen Crivella 8/8/2011 10:22:00 AM**

This is fairly conservative, but not unreasonable. It may be worth it to see how much of the windy areas this standard precludes.

If this is tip height this means more than 750m, which may be too prohibitive for nothing in some cases. Instead, consider a smaller setback combined with a PSL and the 30hours max shadow that will dictate the final setback distance (so perhaps only 500 m from a receptor house if there is only 1 turbine close-by, or 750 m if there are 5 turbines in the backyard... )

**Page 2: [8] Comment [EJC22] Ellen Crivella 8/8/2011 10:24:00 AM**

Be careful of stating that if you abide to these setback distances that you are "safe" with respect to falling, debris and ice? TI think the Town should understand that there is no single setback distance that can do all this, as it depends on the user type, type of structure, etc. There is not need for severe setbacks to property lines if it's in the middle of a field. GL GH would generally recommend a blade +10 from property lines, roads, railways COMBINED with a risk analysis showing acceptable risk to humans.

**Page 2: [9] Comment [EJC23] Ellen Crivella 8/8/2011 10:24:00 AM**

Consider defining "significant adverse impact". The following is suggested language:

"A WEF shall be designed and sited in a matter such that shadow flicker impacts are minimized. The applicant shall prove that shadow flicker duration at sensitive locations does not exceed 30 hours/year or a maximum of 30 minutes/day, based on realistic meteorological assumptions"

This is a common standard used to limit shadow flicker impacts.

**Page 2: [10] Comment [EJC24] Ellen Crivella 8/5/2011 12:47:00 PM**

Consider including construction noise or limiting construction activity to certain hours of the day to avoid disturbing nearby landowners.

**Page 2: [11] Comment [EJC25] Ellen Crivella 8/5/2011 12:47:00 PM**

Consider setting an assumed pre-construction ambient noise level (e.g. 25 dBA and 30 dBC) and allow a developer to perform a pre-construction sound measurement study upon request.

Consider including the assumed pre-construction ambient noise levels as 8.3.1 and the standard at 8.3.2 for clarity.

This is a very conservative standard. Most ordinances suggest a 45 bBA standard a occupied dwellings.

**Page 2: [12] Comment [EJC26] Ellen Crivella 8/5/2011 12:47:00 PM**

Consider specifying how to determine whether the tonal noise penalty will be applied as not all wind turbines exhibit tonal noise.

**Page 2: [13] Comment [EJC27] Ellen Crivella 8/5/2011 12:47:00 PM**

Sound pressure level (SPL) is the measurement of sound that includes the power rating of the source, the distance between the source and the measurement point, and the amount of sound energy absorbed by environmental elements between the source and the measurement point.

**Page 3: [14] Comment [EJC28] Ellen Crivella 8/8/2011 10:26:00 AM**

This standard equates to a maximum sound pressure level of 30 dB(A) and 50 dB(C), which is a very stringent standard.

The World Health Organization suggest maximum daytime levels of 55 dB(A) to protect against serious annoyance and 50 dB(A) to protect against moderate annoyance, and maximum nighttime levels of 45 dB(A). Generally, if sound levels outside a residence remain at or below 45 dB(A), sound levels inside the residence will remain below 30 dB(A).

The noise section I think has to be seriously discussed with the Town... GL GH recommends:

- SPLs at actual receptor (non-participating) locations, such as dwellings, parks, camp grounds, and churches- not property lines
- Absolute SPL level rather than emergence, and set it at 40 or 45 dBA, based on maximum noise level of turbine.

**Page 3: [15] Deleted** **Ellen Crivella** **7/28/2011 3:32:00 PM**  
DBC levels shall not be more than 20 dB above the measured dBA preconstruction ambient level plus 5 dB

**Page 3: [16] Deleted** **Ellen Crivella** **7/28/2011 3:34:00 PM**  
8.3.2 Prior to permit application approval, a pre-construction ambient noise level study shall be conducted at each property line within 2 miles of any proposed wind turbine. Tests shall be conducted using both A weighted (dBA) and C weighted (dBC) scales. A 5 dBA penalty shall be applied for tonal noise. This is a single tone or limited frequency noise (vs. broadband noise) associated with mechanical noise artifacts (i.e. high pitched whining, screeching, buzzing)

**Page 3: [17] Comment [EJC30]** **Ellen Crivella** **8/5/2011 12:47:00 PM**  
Consider setting an assumed pre-construction ambient noise level (e.g. 25 dBA and 30 dBC) and allow a developer to perform a pre-construction sound measurement study upon request.

Consider including the assumed pre-construction ambient noise levels as 8.3.1 and the standard at 8.3.2 for clarity.

**Page 3: [18] Comment [EJC32]** **Ellen Crivella** **8/5/2011 12:47:00 PM**  
PE in acoustics required? There are few engineers with an acoustical designation.

**Page 3: [19] Comment [EJC33]** **Ellen Crivella** **8/5/2011 12:47:00 PM**  
See comment above. I'd suggest 101kW to avoid conflict with "small-scale, 100kW" machines.

**Page 3: [20] Comment [EJC34]** **Ellen Crivella** **8/5/2011 12:47:00 PM**  
Will this plan need to be approved prior to submitting an application for a permit or is the intent for this to be a condition of the permit, completed prior to COD?

**Page 3: [21] Comment [EJC35]** **Ellen Crivella** **8/5/2011 12:47:00 PM**  
If WEF is defined as "a wind energy facility having one or more turbines with a nameplate capacity of 101 kW or more" then this phrase will not have to be repeated throughout the document.

**Page 3: [22] Comment [EJC36]** **Ellen Crivella** **8/5/2011 12:47:00 PM**  
Generally the parts of the turbine that catch on fire include the oil in the gear boxes, which in turn can cause the fiberglass and wooden parts to burn (nacelle and blades). These materials cannot be substituted for a different, less flammable substance.

**Page 3: [23] Comment [EJC37]** **Ellen Crivella** **8/5/2011 12:47:00 PM**  
This may be better as a recommendation or best management practice, as not all turbines come standard with this feature. Some turbine manufacturers offer it as an option and others do not, in which case it is an aftermarket feature and more expensive. By including this the Town may be limiting turbine choices that may be well suited to this area.

**Page 3: [24] Comment [EJC38]** **Ellen Crivella** **8/5/2011 12:47:00 PM**  
Consider including solid waste too?

"The Owner/Operator of any WEF shall be responsible for compliance with all ordinances, regulations, and state and federal laws applicable to the generation, handling, storage, cleanup, transport, and disposal of solid and hazardous wastes connected with the WED."

**Page 3: [25] Comment [EJC39]** **Ellen Crivella** **8/5/2011 12:47:00 PM**  
At the time of application? Also, what should be contained in a Road and Property Risk Assessment?

**Page 3: [26] Comment [EJC40]** **Ellen Crivella** **8/5/2011 12:47:00 PM**  
What does "qualified" in this instance mean? PE in NH? Years of experience in transportation engineering?

**Page 4: [27] Comment [EJC46]** **Ellen Crivella** **8/5/2011 12:47:00 PM**  
Is this suggesting three years of post construction studies or just a report to the Planning Board three years after COD?

I would suggest not requiring post construction studies, but instead potentially conditioning the permit with such studies depending on the results from the pre-construction wildlife studies. Also, the mitigation plan

should be included in the Wildlife Protection Plan, so that the Planning Board can review any proposed mitigation and assess whether or not it is appropriate.

Perhaps combine sections 9.3.1 and 9.3.2 into the following:

“The application for a permit to construct a WEF shall include a Wildlife Protection Plan based on pre-construction field studies, designed and carried out by a qualified wildlife biologist chose by the Applicant from a list provided by the Planning Board and paid by the Applicant. Such studies shall describe the possible adverse effects of the WEF on birds, bats, animals and their habitats, and shall propose mitigation measures for these effects. The Planning Board may recommend post-construction studies or fatality monitoring if adverse impacts to wildlife or habitat are anticipated. In the event that undue adverse affects are caused by the WEF the Owner/Operator may be required to undertake additional enhanced mitigation efforts. The Owner/Operator shall be responsible for the full cost of carrying out additional mitigation measures.”

<b>Page 4: [28] Comment [EJC50]</b>	<b>Ellen Crivella</b>	<b>8/5/2011 12:47:00 PM</b>
What about surface water quality? Should wetlands and streams be surveyed as well? Is it possible that some wetlands and streams may not be considered “environmentally sensitive areas” and thus not afforded any protection?		

<b>Page 5: [29] Comment [EJC52]</b>	<b>Ellen Crivella</b>	<b>8/5/2011 12:47:00 PM</b>
While I understand the intent here, wind energy facilities typically do not pose much of a threat to water quality. This might be a tad much and the ordinance is already more stringent than most I’ve seen at the local jurisdiction level, so perhaps consider removing this piece.		

<b>Page 5: [30] Comment [EJC53]</b>	<b>Ellen Crivella</b>	<b>8/5/2011 12:47:00 PM</b>
Hazardous wastes are addressed above, using almost identical language. I would suggest removing one of these.		

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plan		

<b>Page 5: [32] Comment [EJC55]</b>	<b>Ellen Crivella</b>	<b>8/5/2011 12:47:00 PM</b>
Consider including a statement that requires “flashing or strobe lights” as these types of lights are less attractive to flying wildlife.		

Also, perhaps state “The frequency of the flashing or strobe on all lights shall be synchronized across the entire WEF.”

<b>Page 5: [33] Comment [EJC56]</b>	<b>Ellen Crivella</b>	<b>8/8/2011 10:27:00 AM</b>
Consider removing this- I’m not entirely sure this can reasonably be accomplished.		

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Most projects do not obtain construction financing prior to permitting approval. Suggest changing to make this a condition of the approved permit.

“Prior to construction proof of adequate financing for all aspects of construction through COD must be provided to the Planning Board.”

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Decommissioning is mentioned, but a Decommissioning Plan is not. This is something that is becoming more and more common.

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What about other subsurface components, such as cables? Usually infrastructure up to a depth of 3-4 ft must be removed and the site condition restored.

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Consider including "to the maximum extent practicable."

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Previous language states "qualified" engineer. Is the intent the same here or has a distinction been made consciously.

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I would recommend, per the comment above, to require a Decommissioning Plan. This is a more complete estimation of costs, income due to salvage, mitigation commitments, plans for removal, etc. This would be a more thought out exercise than just a cost estimate.

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Consider every 5 years, unless an annual report will be required as well.

This will be something that the Town will likely have to track and may potentially want to send reminder letters.

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Often turbines are not selected until after the permitting process.

Some legislation requires that a realistic worst-case scenario be considered, while others allow the developer to examine two turbine types that represent a reasonable range in choices (ex: Vestas 1.5 MW and GE 3.0 MW), or a “typical” turbine could be used where the specs are generalized (80 m RD, 80 m HH).

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How much flexibility is allowed with these locations?

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Also, consider including these:

EMI Study  
Revegetation Plan  
Dust Control Plan  
Wetland Delineation Report  
Floodplain Assessment  
Cultural/Historic Resources Report

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<b>Page 8: [142] Comment [EJC73]</b>	<b>Ellen Crivella</b>	<b>8/5/2011 12:47:00 PM</b>
This information is typically not included in a permit application and the information is highly confidential in the development process and thus applicants will likely push back on this requirements. I would suggest removing this.		
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How long is approval good for?		
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Can applicants apply for a variance for certain provisions?		
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Consider "within 30 days of COD".		
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